ABSTRACT

The invention proposes a fine grained sintered cemented carbide containing chromium and based on WC and a binder based on Co or CoNiFe, and having at least one additional phase comprising at least one carbide or mixed carbide of tantalum. For improving the high-temperature properties while simultaneously maintaining a good trade-off between hardness and bending strength, it is proposed that the sintered cemented carbide contains approximately 0.3 to 4 % Ta, as related to the total mass of the sintered cemented carbide, that the WC has a grain size of between 0.1 and 1.3 µm, that the binder phase contains the metals W, Cr and Ta, dissolved in solid solution, and that the at least one additional phase comprises a TaC phase visible by optical microscopy. The invention further relates to a powder-metallurgical process for manufacturing the sintered cemented carbide and to the use of the sintered cemented carbide for manufacturing cutting tools having improved high-temperature properties.

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